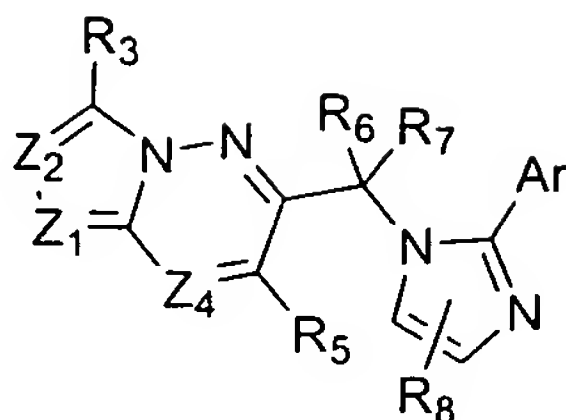


What is claimed is:

I. A compound of the formula:



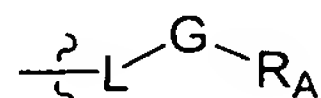
or a pharmaceutically acceptable salt thereof, wherein:

Z<sub>1</sub> is nitrogen or CR<sub>1</sub> and Z<sub>2</sub> is nitrogen or CR<sub>2</sub>; such that at least one of Z<sub>1</sub> and Z<sub>2</sub> is nitrogen;

Z<sub>4</sub> is nitrogen or CR<sub>4</sub>;

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently selected from:

- (a) hydrogen, halogen, nitro and cyano; and
- (b) groups of the formula:



wherein:

L is a single covalent bond or C<sub>1</sub>-C<sub>8</sub>alkylene;

G is a single covalent bond, N(R<sub>B</sub>), O, C(=O), C(=O)O, C(=O)N(R<sub>B</sub>), N(R<sub>B</sub>)C(=O), S(O)<sub>m</sub>, CH<sub>2</sub>C(=O), S(O)<sub>m</sub>N(R<sub>B</sub>) or N(R<sub>B</sub>)S(O)<sub>m</sub>; wherein m is 0, 1 or 2; and

R<sub>A</sub> and each R<sub>B</sub> are independently selected from:

- (i) hydrogen; and
- (ii) C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkynyl, (C<sub>3</sub>-C<sub>8</sub>cycloalkyl)C<sub>0</sub>-C<sub>4</sub>alkyl, (3- to 6-membered heterocycloalkyl)C<sub>0</sub>-C<sub>4</sub>alkyl, (aryl)C<sub>0</sub>-C<sub>2</sub>alkyl and (heteroaryl)C<sub>0</sub>-C<sub>2</sub>alkyl, each of which is substituted with from 0 to 4 substituents independently selected from halogen, hydroxy, nitro, cyano, amino, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkanoyl, mono- and di(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, C<sub>1</sub>-C<sub>4</sub>haloalkyl and C<sub>1</sub>-C<sub>4</sub>haloalkoxy;

R<sub>5</sub> is hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>alkenyl, C<sub>2</sub>-C<sub>6</sub>alkynyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, or mono- or di-(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, each of which is substituted with from 0 to 5 substituents independently chosen from halogen, hydroxy, nitro, cyano, amino, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>2</sub>haloalkyl, C<sub>1</sub>-C<sub>2</sub>haloalkoxy, mono- and di-C<sub>1</sub>-C<sub>4</sub>alkylamino, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, phenyl, phenylC<sub>1</sub>-C<sub>4</sub>alkoxy and 5- or 6-membered heteroaryl;

R<sub>6</sub> and R<sub>7</sub> are independently hydrogen, methyl, ethyl or halogen;

R<sub>8</sub> represents 0, 1 or 2 substituents independently chosen from halogen, hydroxy, nitro, cyano, amino, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, mono- and di(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, C<sub>3</sub>-C<sub>7</sub>cycloalkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl and C<sub>1</sub>-C<sub>2</sub>haloalkoxy; and

Ar represents phenyl, naphthyl or a 5- to 10-membered heteroaryl, each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, nitro, cyano, amino, C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>1</sub>-C<sub>8</sub>alkenyl, C<sub>1</sub>-C<sub>8</sub>alkynyl, C<sub>1</sub>-C<sub>8</sub>alkoxy, (C<sub>3</sub>-C<sub>7</sub>cycloalkyl)C<sub>0</sub>-C<sub>4</sub>alkyl, (C<sub>3</sub>-C<sub>7</sub>cycloalkyl)C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>2</sub>-C<sub>8</sub>alkyl ether, C<sub>3</sub>-C<sub>8</sub>alkanone, C<sub>1</sub>-C<sub>8</sub>alkanoyl, 3- to 7-membered heterocycloalkyl, C<sub>1</sub>-C<sub>8</sub>haloalkyl, C<sub>1</sub>-C<sub>8</sub>haloalkoxy, oxo, C<sub>1</sub>-C<sub>8</sub>hydroxyalkyl, C<sub>1</sub>-C<sub>8</sub>aminoalkyl, and mono- and di-(C<sub>1</sub>-C<sub>8</sub>alkyl)aminoC<sub>0</sub>-C<sub>8</sub>alkyl.

2. A compound or salt according to claim 1, wherein R<sub>8</sub> represents 0 or 1 substituent selected from halogen, C<sub>1</sub>-C<sub>2</sub>alkyl and C<sub>1</sub>-C<sub>2</sub>alkoxy.

3. A compound or salt according to claim 1 or claim 2, wherein Ar is substituted with 0, 1, 2 or 3 substituents independently selected from halogen, hydroxy, amino, cyano, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, mono- or di-C<sub>1</sub>-C<sub>4</sub>alkylamino, C<sub>2</sub>-C<sub>4</sub>alkanoyl, (C<sub>3</sub>-C<sub>7</sub>cycloalkyl)C<sub>0</sub>-C<sub>2</sub>alkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl and C<sub>1</sub>-C<sub>2</sub>haloalkoxy.

4. A compound or salt according to claim 1 or claim 2, wherein Ar represents phenyl, pyridyl, thiazolyl, thienyl, pyridazinyl or pyrimidinyl, each of which is substituted with from 0 to 4 substituents.

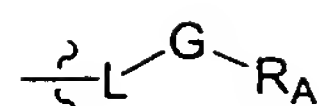
5. A compound or salt according to claim 4, wherein Ar represents phenyl, pyridyl, thiazolyl, thienyl or pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from chloro, fluoro, hydroxy, cyano, amino, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>2</sub>alkylamino, C<sub>1</sub>-C<sub>2</sub>haloalkyl and C<sub>1</sub>-C<sub>2</sub>haloalkoxy.

6. A compound or salt according to claim 5, wherein Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or pyridazin-3-yl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy, C<sub>1</sub>-C<sub>2</sub>alkyl, cyano and C<sub>1</sub>-C<sub>2</sub>alkoxy.

7. A compound or salt according to claim 5, wherein Ar represents 2,6-difluoro-phenyl, 2,5-difluoro-phenyl, 5-fluoro-2-methyl-phenyl, pyridine-2-yl, 3-fluoro-pyridin-2-yl, 3-cyano-pyridin-2-yl, 3-trifluoromethyl-pyridin-2-yl, 3-hydroxy-pyridin-2-yl, 3-methoxy-pyridin-2-yl, 6-fluoro-pyridin-2-yl, 6-cyano-pyridin-2-yl, 6-trifluoromethyl-pyridin-2-yl, 6-hydroxy-pyridin-2-yl or 6-methoxy-pyridin-2-yl.

8. A compound or salt according to any one of claims 1-7, wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are independently selected from:

- (a) hydrogen, halogen or cyano; and
- (b) groups of the formula:



wherein:

- (i) L is a single covalent bond;
- (ii) G is a single covalent bond, -NH-, -N(R<sub>B</sub>)-, -O-, -C(=O)O- or C(=O)-; and
- (iii) R<sub>A</sub> and R<sub>B</sub> are independently selected from (1) hydrogen and (2) C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>alkenyl, (C<sub>3</sub>-C<sub>7</sub>cycloalkyl)C<sub>0</sub>-C<sub>2</sub>alkyl, phenyl, thienyl, pyridyl, pyrimidinyl, thiazolyl and pyrazinyl, each of which is substituted with from 0 to 4 substituents independently selected from hydroxy, halogen, cyano, amino, C<sub>1</sub>-C<sub>2</sub>alkyl and C<sub>1</sub>-C<sub>2</sub>alkoxy.

9. A compound or salt according to claim 8 wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are independently selected from hydrogen, hydroxy, halogen, cyano, aminocarbonyl, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>2</sub>-C<sub>6</sub>alkyl ether, C<sub>3</sub>-C<sub>7</sub>cycloalkyl, C<sub>1</sub>-C<sub>4</sub>hydroxyalkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl, C<sub>1</sub>-C<sub>2</sub>haloalkoxy, C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, mono- and di-(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, phenyl and pyridyl.

10. A compound or salt according to claim 9, wherein R<sub>3</sub> and R<sub>4</sub> are independently selected from hydrogen, methyl and ethyl.

11. A compound or salt according to any one of claims 1-10, wherein Z<sub>1</sub> is nitrogen and Z<sub>2</sub> is CR<sub>2</sub>.

12. A compound or salt according to claim 11, wherein R<sub>2</sub> is selected from hydrogen, cyano, aminocarbonyl, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, C<sub>2</sub>-C<sub>4</sub>alkyl ether, C<sub>3</sub>-C<sub>7</sub>cycloalkyl, C<sub>1</sub>-C<sub>2</sub>hydroxyalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, phenyl and pyridyl.

13. A compound or salt according to any one of claims 1-10, wherein Z<sub>1</sub> is CR<sub>1</sub> and Z<sub>2</sub> is nitrogen.

14. A compound or salt according to claim 13, wherein R<sub>1</sub> is selected from hydrogen, cyano, aminocarbonyl, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, C<sub>2</sub>-C<sub>4</sub>alkyl ether, C<sub>3</sub>-C<sub>7</sub>cycloalkyl, C<sub>1</sub>-C<sub>2</sub>hydroxyalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, phenyl and pyridyl.

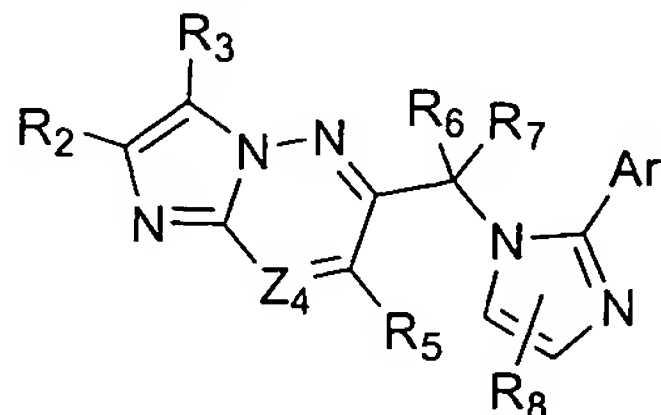
15. A compound or salt according to any one of claims 1-10, wherein Z<sub>1</sub> and Z<sub>2</sub> are nitrogen.

16. A compound or salt according to any one of claims 1-15, wherein R<sub>6</sub> and R<sub>7</sub> are both hydrogen.

17. A compound or salt according to any one of claims 1-16, wherein  $R_5$  is  $C_1$ - $C_6$ alkyl,  $C_2$ - $C_6$  alkenyl,  $C_1$ - $C_4$  alkoxy, or mono- or di- $C_1$ - $C_4$ alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy,  $C_1$ - $C_2$ alkoxy,  $C_3$ - $C_8$ cycloalkyl, phenyl and phenyl $C_1$ - $C_2$ alkoxy.

18. A compound or salt according to claim 17, wherein  $R_5$  is ethyl, propyl, butyl, ethoxy or methoxymethyl.

19. A compound or salt according to claim 1, wherein the compound has the formula:



wherein:

$R_2$  is selected from hydrogen, hydroxy, halogen, cyano, aminocarbonyl,  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkoxy,  $C_3$ - $C_7$ cycloalkyl,  $C_2$ - $C_6$ alkyl ether,  $C_1$ - $C_4$ hydroxyalkyl,  $C_1$ - $C_2$ haloalkyl,  $C_1$ - $C_2$ haloalkoxy,  $C_1$ - $C_4$ alkoxycarbonyl, mono- and di- $(C_1$ - $C_4$ alkyl)amino, phenyl and pyridyl;

$R_3$  and  $R_4$ , if present, are independently hydrogen or  $C_1$ - $C_4$ alkyl;

$R_5$  is  $C_1$ - $C_6$ alkyl,  $C_2$ - $C_6$ alkenyl,  $C_1$ - $C_4$ alkoxy, or mono- or di- $C_1$ - $C_4$ alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy,  $C_1$ - $C_2$ alkoxy,  $C_3$ - $C_8$ cycloalkyl, phenyl and phenyl $C_1$ - $C_2$ alkoxy;

$R_6$  and  $R_7$  are independently hydrogen, methyl, ethyl or halogen;

$R_8$  represents 0 or 1 substituent selected from halogen,  $C_1$ - $C_2$ alkyl and  $C_1$ - $C_2$ alkoxy; and

Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or 3-pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy,  $C_1$ - $C_2$ alkyl,  $C_1$ - $C_2$ haloalkyl, cyano and  $C_1$ - $C_2$ alkoxy.

20. A compound or salt according to claim 19, wherein:

$R_2$  is hydrogen, cyano, aminocarbonyl,  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkoxy,  $C_3$ - $C_6$ cycloalkyl,  $C_2$ - $C_6$ alkyl ether,  $C_1$ - $C_4$ hydroxyalkyl,  $C_1$ - $C_2$ haloalkyl or  $C_1$ - $C_4$ alkoxycarbonyl;

$Z_4$  is  $CR_4$ ;

$R_3$  and  $R_4$  are independently hydrogen or  $C_1$ - $C_2$ alkyl;

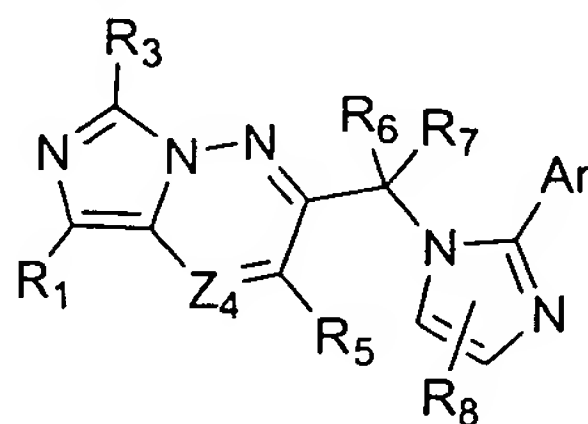
$R_5$  is  $C_1$ - $C_6$ alkyl or  $C_2$ - $C_6$ alkenyl, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy and  $C_1$ - $C_2$ alkoxy;

$R_6$  and  $R_7$  are hydrogen;

$R_8$  represents 0 substituents; and

Ar represents phenyl or 2-pyridyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, C<sub>1</sub>-C<sub>2</sub>alkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl, cyano and C<sub>1</sub>-C<sub>2</sub>alkoxy.

21. A compound or salt according to claim 1, wherein the compound has the formula:



wherein:

R<sub>1</sub> is selected from hydrogen, hydroxy, halogen, cyano, aminocarbonyl, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>3</sub>-C<sub>7</sub>cycloalkyl, C<sub>2</sub>-C<sub>6</sub>alkyl ether, C<sub>1</sub>-C<sub>4</sub>hydroxyalkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl, C<sub>1</sub>-C<sub>2</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, mono- and di-(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, phenyl and pyridyl;

R<sub>3</sub> and R<sub>4</sub>, if present, are independently hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>5</sub> is C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, or mono- or di-C<sub>1</sub>-C<sub>4</sub>alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy, C<sub>1</sub>-C<sub>2</sub>alkoxy, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, phenyl and phenylC<sub>1</sub>-C<sub>2</sub>alkoxy;

R<sub>6</sub> and R<sub>7</sub> are independently hydrogen, methyl, ethyl or halogen;

R<sub>8</sub> represents 0 or 1 substituent selected from halogen, C<sub>1</sub>-C<sub>2</sub>alkyl and C<sub>1</sub>-C<sub>2</sub>alkoxy; and

Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or 3-pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy, C<sub>1</sub>-C<sub>2</sub>alkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl, cyano and C<sub>1</sub>-C<sub>2</sub>alkoxy.

22. A compound or salt according to claim 21, wherein:

R<sub>1</sub> is hydrogen, cyano, aminocarbonyl, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>3</sub>-C<sub>6</sub>cycloalkyl, C<sub>2</sub>-C<sub>6</sub>alkyl ether, C<sub>1</sub>-C<sub>4</sub>hydroxyalkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl or C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl;

Z<sub>4</sub> is CR<sub>4</sub>;

R<sub>3</sub> and R<sub>4</sub> are independently hydrogen or C<sub>1</sub>-C<sub>2</sub>alkyl;

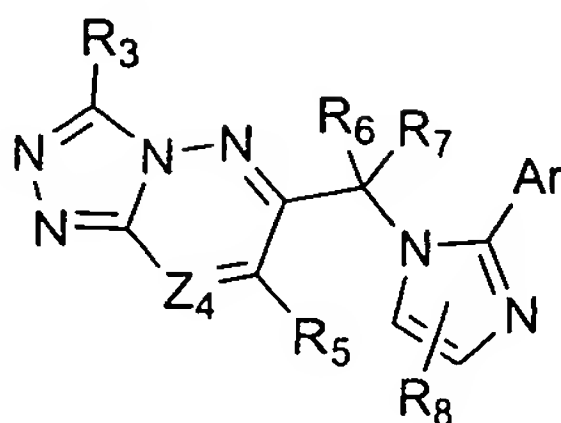
R<sub>5</sub> is C<sub>1</sub>-C<sub>6</sub>alkyl or C<sub>2</sub>-C<sub>6</sub>alkenyl, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy and C<sub>1</sub>-C<sub>2</sub>alkoxy;

R<sub>6</sub> and R<sub>7</sub> are hydrogen;

R<sub>8</sub> represents 0 substituents; and

Ar represents phenyl or 2-pyridyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, C<sub>1</sub>-C<sub>2</sub>alkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl, cyano and C<sub>1</sub>-C<sub>2</sub>alkoxy.

23. A compound or salt according to claim 1, wherein the compound has the formula:



wherein:

R<sub>3</sub> and R<sub>4</sub>, if present, are independently hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>5</sub> is C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, or mono- or di-C<sub>1</sub>-C<sub>4</sub>alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy, C<sub>1</sub>-C<sub>2</sub>alkoxy, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, phenyl and phenylC<sub>1</sub>-C<sub>2</sub>alkoxy;

R<sub>6</sub> and R<sub>7</sub> are independently hydrogen, methyl, ethyl or halogen;

R<sub>8</sub> represents 0 or 1 substituent selected from halogen, C<sub>1</sub>-C<sub>2</sub>alkyl and C<sub>1</sub>-C<sub>2</sub>alkoxy; and

Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or 3-pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy, C<sub>1</sub>-C<sub>2</sub>alkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl, cyano and C<sub>1</sub>-C<sub>2</sub>alkoxy.

24. A compound or salt according to claim 23, wherein:

Z<sub>4</sub> is CR<sub>4</sub>;

R<sub>3</sub> and R<sub>4</sub> are independently hydrogen or C<sub>1</sub>-C<sub>2</sub>alkyl;

R<sub>5</sub> is C<sub>1</sub>-C<sub>6</sub>alkyl or C<sub>2</sub>-C<sub>6</sub>alkenyl, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy and C<sub>1</sub>-C<sub>2</sub>alkoxy;

R<sub>6</sub> and R<sub>7</sub> are hydrogen;

R<sub>8</sub> represents 0 substituents; and

Ar represents phenyl or 2-pyridyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, C<sub>1</sub>-C<sub>2</sub>alkyl, C<sub>1</sub>-C<sub>2</sub>haloalkyl, cyano and C<sub>1</sub>-C<sub>2</sub>alkoxy.

25. A compound or salt according to any one of claims 1-24, wherein the compound exhibits a K<sub>i</sub> of 1 micromolar or less in an assay of GABA<sub>A</sub> receptor binding.

26. A compound or salt according to claim 25, wherein the compound exhibits a K<sub>i</sub> of 100 nanomolar or less in an assay of GABA<sub>A</sub> receptor binding.

27. A compound or salt according to claim 26, wherein the compound exhibits a K<sub>i</sub> of 10 nanomolar or less in an assay of GABA<sub>A</sub> receptor binding.

28. A pharmaceutical composition comprising a compound or salt according to any one of claims 1-24 in combination with a physiologically acceptable carrier or excipient.

29. A pharmaceutical composition according to claim 28, wherein the pharmaceutical composition is formulated as an injectible fluid, an aerosol, a cream, a gel, a pill, a capsule, a syrup or a transdermal patch.

30. A method for the treatment of anxiety, depression, a sleep disorder, attention deficit disorder or Alzheimer's dementia, comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound or salt according to any one of claims 1-24.

31. A method for potentiating a therapeutic effect of a CNS agent, comprising administering to a patient a CNS agent and a compound or salt according to any one of claims 1-24.

32. A method for improving short term memory in a patient, comprising administering to a patient a therapeutically effective amount of a compound or salt according to any one of claims 1-24.

33. A method for altering the signal-transducing activity of GABA<sub>A</sub> receptor, comprising contacting a cell expressing GABA<sub>A</sub> receptor with a compound or salt according any one of claims 1-24 in an amount sufficient to detectably alter the electrophysiology of the cell, and thereby altering GABA<sub>A</sub> receptor signal-transducing activity.

34. A method according to claim 33, wherein the cell recombinantly expresses a heterologous GABA<sub>A</sub> receptor, and wherein the alteration of the electrophysiology of the cell is detected by intracellular recording or patch clamp recording.

35. A method for determining the presence or absence of GABA<sub>A</sub> receptor in a sample, comprising the steps of:

- (a) contacting a sample with a compound or salt according claim 1, under conditions that permit binding of the compound to GABA<sub>A</sub> receptor;
  - (b) removing the compound or salt that is not bound to GABA<sub>A</sub> receptor; and
  - (c) detecting a level of the compound or salt bound to GABA<sub>A</sub> receptor;
- and therefrom determining the presence or absence of GABA<sub>A</sub> receptor in the sample.

36. A method according to claim 35, wherein the presence or absence of bound compound is detected using autoradiography.

37. A method for determining the presence or absence of GABA<sub>A</sub> receptor in a sample, comprising:  
determining background binding by, in order:



- (a) contacting a first sample with a measured molar concentration of a labeled compound that is known not to bind to GABA<sub>A</sub> receptors, under conditions that permit binding of compounds to GABA<sub>A</sub> receptors;
  - (b) washing the first sample under conditions that permit removal of compounds that are not bound to GABA<sub>A</sub> receptors; and
  - (c) detecting as a background binding amount an amount of label remaining after washing;
- and
- determining GABA<sub>A</sub> binding by, in order:
- (d) contacting with a labeled compound or salt according to claim 1 a second sample matched to the first sample, said compound or salt being present at the measured molar concentration of (a) and said contacting being carried out under the conditions used in (a);
  - (e) washing the second sample under the conditions used in (b),
  - (f) detecting an amount of label remaining in the second sample after washing; and
  - (g) subtracting the background binding amount determined in (c ) from the amount of label remaining in the second sample determined in (f)
- wherein the remainder of a positive amount after the subtraction of (g) indicates the presence of GABA<sub>A</sub> receptor in the second sample.

38. A method according to claim 37, wherein the amount of label remaining after washing of the first sample and the second sample is detected using autoradiography.

39. A packaged pharmaceutical preparation comprising a pharmaceutical composition according to claim 28 in a container and instructions for using the composition to treat a patient suffering from anxiety, depression, a sleep disorder, attention deficit disorder, Alzheimer's dementia or short-term memory loss.

40. The use of a compound or salt according to claim 1 for the manufacture of a medicament for the treatment of a condition selected from anxiety, depression, a sleep disorder, an attention deficit disorder, Alzheimer's dementia and short-term memory loss.

41. 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine or a pharmaceutically acceptable salt thereof.

42. 2-tert-butyl-6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine or a pharmaceutically acceptable salt thereof.

43. 2-ethyl-6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine or a pharmaceutically acceptable salt thereof.



44. 2-methyl-6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine or a pharmaceutically acceptable salt thereof.
45. 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-2-trifluoromethyl-imidazo[1,2-b]pyridazine or a pharmaceutically acceptable salt thereof.
46. 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine-2-carboxylic acid ethyl ester or a pharmaceutically acceptable salt thereof.
47. 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine-2-carboxylic acid amide or a pharmaceutically acceptable salt thereof.
48. 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine-2-carbonitrile or a pharmaceutically acceptable salt thereof.
49. 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-8-methyl-7-propyl-imidazo[1,2-b]pyridazine or a pharmaceutically acceptable salt thereof.
50. 2-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-5-methyl-3-propyl-imidazo[1,5-b]pyridazine or a pharmaceutically acceptable salt thereof.
51. 7-ethyl-6-[2-(3-fluoro-phenyl)-imidazol-1-ylmethyl]-[1,2,4]triazolo[4,3-b]pyridazine or a pharmaceutically acceptable salt thereof.
52. 7-ethyl-6-[2-(3-fluoro-phenyl)-imidazol-1-ylmethyl]-3-methyl-[1,2,4]triazolo [4,3-b]pyridazine or a pharmaceutically acceptable salt thereof.